HABITAT CONSERVATION TRUST FOUNDATION

2013-14 Enhancement Proposal (5-271)

New Multi-Year Project: Quesnel Lake Angler Exploitation Study

(EDITOR'S NOTE: Some names and facts have been altered for the sake of this example. Some questions have also changed in more recent proposal forms)

Proponent: Senior Fisheries Biologist

Organization: Ministry of Forests, Lands and Natural Resource Operations

Amount Requested from HCTF in 2013-14: $83,350

This is Year 1 of 5

Project Description:

This is a five year study to estimate the proportion of large rainbow trout, bull trout and lake trout caught in Quesnel Lake. Project results will provide management with science based data for revising regulations and harvest quotas for each species which may result in increased angler use on Quesnel Lake.

Project Location: Quesnel Lake

Species Enhanced: F-ONMY, F-SACO, F-SANA **note we no longer use these species codes*

This proposal links to HCTF project #:

Is this proposal resulting from a Seed project?: No

Have you discussed this project with the regional Ministry biologist?: Yes

Please provide the name of this person and any relevant comments: Regional fisheries biologists. Provincial Large Lakes Committee.

Multi-Year Budget

Year	Funding Year	HCTF Requested/ Projected	HCTF Approved (to-date)	Other Funding	Project Total
1	2013-2014	$83,350		$72,300	$155,650
2	2014-2015	$83,350		$25,000	$108,350
3	2015-2016	$83,350		$25,000	$108,350
4	2016-2017	$83,350		$25,000	$108,350
5	2017-2018	$83,350		$25,000	$108,350
	Total =	$416,750	$0	$172,300	$589,050

Multi-Year Budget Comments:

Year 1: Confirmed partnership contributions from MFLNRO and industry will cover costs associated with the purchasing and initial deployment of acoustic receivers to provide the foundation for the study.

Years 2-5: The MFLNRO will continue to provide in-kind support in the form of staff time and equipment to ensure the target number of tags are deployed (if contracted boat does not reach target sample size).

The MFLNRO will also ensure the acoustic array is maintained, including during the winter months. The majority of Quesnel Lake does not freeze over during winter, however, a contingency plan will be in place in the event of a particularly cold winter. MFLNRO staff will take the necessary steps to ensure the effectiveness of the acoustic array is maintained. MFLNRO fisheries staff will engage the angling public through meetings with local fish and game clubs, guides and resort owners to maintain support for the project.

HCTF funding will be utilized to purchase acoustic tags and contract a guide and biologist both experienced in successfully catching, surgically tagging and releasing trout in large lakes. Contractors hired for this project will be the same contractors that recently completed the successful acoustic study on Kootenay Lake (HCTF project).

Executive Summary:

Large rainbow trout, bull trout and lake trout of Quesnel Lake support the largest "wild fish" sport fishery in the Cariboo region (Sebastian et al. 2003). A great deal of valuable information can be obtained at considerably less cost by focussing on tagging a relatively small number of larger size trout, obtaining recapture data through reward tags and tracking their movement into suspected or known spawning streams. This proposed project is therefore designed after the successful project conducted on Kootenay Lake by Thorley and Andrusak (2011, 2012; HCTF Project #: CAT11-4-413) that was funded largely by HCTF.

There is no information available regarding exploitation rates of trout in Quesnel Lake. As such, in lieu of scientific data, a set of relatively restrictive and controversial regulations were implemented in 2002/2003. Quesnel Lake currently has one of the most restrictive daily catch limits of any large lake in the province which includes mandatory release of all bull trout and all rainbow trout greater than 50cm as well as a daily quota of one lake trout. However, reports from resort owners and general angling public have indicated these restrictive regulations have resulted in decreased angler use of the Quesnel Lake fishery. Furthermore, anecdotal information from recreational anglers, guides and resort owners indicate the abundance of rainbow trout, lake trout and bull trout has increased substantially in recent years. Given the above information, there may be a chance to provide increased harvest opportunity for rainbow trout, bull trout and/or lake trout in Quesnel Lake. However, managers cannot deviate from a precautionary approach without sound scientific data regarding this wild stock fishery. Managers will use the information gathered during this study directly to evaluate the regulatory regime for the Quesnel Lake fishery.

This project will quantify the proportions of the rainbow trout, bull trout and lake trout populations caught by anglers each year to determine current angler exploitation rates (Bison et al. 2003; Thorley et al. 2007). This will be achieved by tagging rod-caught rainbow trout, bull trout and lake trout with acoustic tags and high-reward floy tags. MFLNRO fisheries staff conducted test angling in 2011 and 2012 to validate feasibility of catching an adequate number of each species. Observed exploitation rates will be evaluated against optimal rates calculated for each species on other large lakes throughout BC and Ontario (Shuter et al. 1998; Bison et al. 2003; Andrusak and Thorley, 2011; Andrusak and Thorley 2012; Andy Morris personal communication, 2012). This project is proposed for five years based on the Kootenay Lake experience. To take full advantage of the expected wealth of data generated, this project needs to track tagged trout as they move through the fishery for a minimum of seven years. This is the reason why the project proposal includes two additional years of low cost receiver monitoring after five years of tagging. We anticipate that HCTF may want to restrict the project length to five years and as such will request a new project for the monitoring component.

This project will help HCTF meet the goal of being a recognized leader in fish, wildlife and habitat conservation as there will be considerable interest from local resort owners, guides and general angling

public as the current restrictive angling regulations for Quesnel Lake have remained controversial since being implemented in 2002/2003. The MFLNRO fisheries staff will engage resort owners, guides and angling clubs throughout the course of this study. HCTF will be recognized as the primary partner in conducting this study focussed on ensuring the long term sustainability of these wild stocks while also maximizing angling opportunities on Quesnel Lake. Total cost of the project in year 1 is $155,650 with $83,350 requested from HCTF.

Issue:

The large rainbow trout, bull trout and lake trout of Quesnel Lake support an economically important sport fishery but little is known about the proportion of the populations annually harvested by anglers (Sebastian et al. 2003; Dolighan et al. 2011). Sebastian et al. (2003) indicated that size of Quesnel Lake rainbow trout had decreased and attributed the decline to fewer prey items (i.e., kokanee) and possible overharvest of older trout. As such, very restrictive regulations were implemented for the Quesnel Lake fishery. However, in recent years anecdotal reports from the angling public indicate increases in trout densities. Local anglers and resort operators continue to express frustration with the restrictive regulations that remain in place in the absence of scientific data. Stakeholders have indicated the restrictive regulations have resulted in a decline in angling use; including the closure of a long time resort.

This proposal aims to catch, tag and acoustically detect sufficient numbers of large rainbow trout, bull trout and lake trout in Quesnel Lake to reliably estimate natural and fishing mortality (Pollock et al. 2004). This project proposes to use the same methods Andrusak and Thorley (2011, 2012) applied on their Kootenay Lake project. An important modification for this project is extension of time for tagging (5 years) since on Kootenay Lake it has been realized that less than five years of tagging severely limits the ability to determine the exploitation rate of the older fish as they move throughout the fishery (i.e., a series of year classes need to be followed through the fishery from time of full vulnerability through to maturity). In addition to Kootenay Lake, similar methodology has proven successful in meeting objectives for recent HCTF projects on: Shuswap, Adams, and Mabel lakes (Bison et al. 2003, Morris 2012 pers comm, Askey 2012 pers comm).

Managers will use results directly to make regulatory decisions on Quesnel Lake. As was recommended by the 2012 technical review committee, an adaptive management approach will be utilized to discern how exploitation rates vary with changes to angling regulations. The MFLNRO will implement a change in angling regulations after year 2 of the study. This will allow multiple years of monitoring to evaluate impact of the changes to exploitation rates. It is anticipated that more liberal regulations will be implemented for each species. The specific regulatory changes will be guided by results from the first 2 years of the study.

Objectives and Activities Summary:

#	Activities	Measures of Success	Timeline
Objective 1: Estimate exploitation and natural mortality rates of Quesnel Lake rainbow trout, bull trout and lake trout.			
1.1	Deploy 15 acoustic receivers throughout the lake	15 acoustic receivers successfully deployed throughout lake	Spring 2013

1.2	Each year tag 25 rainbow trout, bull trout and lake trout with acoustic tags and high reward floy tags	Tagging completed for 25 fish of each species	March-May 2013-2017
1.3	MFLNRO fisheries staff meet with local fish and game clubs, Quesnel Lake resort owners and guides to spread awareness of the project and what to do when a tagged fish is captured (tags will also have text outlining procedure)	All captured fish reported; rewards administered	March 2013-March 2017
1.4	Downloading and analysis of data	Data downloaded; estimated exploitation rates for each species. Analysis completed.	Fall/winter 2013-2017
Objective 2: Identify movement and distribution of rainbow trout, bull trout and lake trout within the lake. Further define major spawning sites for rainbow trout and blue listed bull trout populations.			
2.1	Deploy 15 acoustic receivers throughout lake	15 acoustic receivers successfully deployed throughout lake	Spring 2013
2.2	Each year tag 25 rainbow trout, bull trout and lake trout with acoustic tags and high reward floy tags	Tagging of 25 fish of each species	March-May 2013-2017
2.3	Receivers will be located off main suspected spawning systems (i.e., Horsefly river, Mitchell river, Blue Lead creek)	Acoustic receivers successfully deployed; high detection rates of tagged fish	March 2013-March 2017
2.4	Download receivers each spring	Successful recovery of receivers and downloading of data	Spring 2014-2017
Objective 3: Increased level of participation and satisfaction in fishing on Quesnel Lake.			

3.1	Analysis of acoustic tag detections and angler floy tag returns	Reliable estimates of exploitation rate for each stock completed	Data analyzed annually; final estimates and variability around exploitation rates (annual).
3.2	Evaluate all data collected and implement effective regulatory regime	Implementation of science based angling regulation regime; increased angler use; increased acceptance/compliance of regulatory regime for Quesnel Lake	March 2017 *note

Note: Some measures of success may not be obtained until after project completion

Objectives and Activities Details:

Objective 1: Estimate exploitation and natural mortality rates of Quesnel Lake rainbow trout, bull trout and lake trout.

The primary operational outcome of estimating exploitation rates of Quesnel Lake rainbow trout, bull trout and lake trout will be to implement angling regulations that effectively sustain these stocks while maximizing angler opportunity. The restrictive regulations currently in place are limiting use of the Quesnel Lake fishery. This project will provide the science based data required to develop these regulations.

Initially 15 receivers will be deployed throughout the lake. One receiver will be placed off the mouth of the Horsefly and Mitchell rivers as well as Blue Lead creek. An additional receiver will be placed in McKinley creek which is known to be a primary rainbow trout spawning stream. Receivers will be deployed in spring 2013.

The first objective will be achieved via the estimation of the natural and angling mortality rates of large rainbow trout, bull trout and lake trout in Quesnel Lake, over multiple years, along with the communication of results to fisheries managers, members of the MFLNRO large lakes committee and local residents and resorts. More specifically, this objective will be achieved by tagging 25 angler caught rainbow trout, bull trout and lake trout with acoustic tags and high reward floy tags. The data will be analyzed using survival analysis. The fish will be caught by the guide and tagged by trained fisheries biologists who participated in the Kootenay Lake project (Andrusak and Thorley 2011). Captured fish are placed in a large cooler filled with fresh water that is aerated by portable aerators. Recovered fish (usually within 10-20 minutes) are placed in a second cooler with fresh lake water and anesthetized

using clove oil at a concentration of 50mg/L. A V13-1L 81 KHz acoustic tag is then implanted in the fish's body cavity using surgical equipment that has been disinfected by soaking in 80% ethanol for 10 minutes. The fish will be externally tagged using numbered orange ($100) and green ($10) floy tags before being placed in the original cooler to recover before being released back into the lake. The external floy tags will have an identification number and MFLNRO phone number. All captured trout will be weighed, measured for fork length and scale sampled. It should be emphasized that use of volunteers was not successful on Kootenay Lake due to unacceptable handling and potential mortality while attempting to transfer live captured fish from one boat to another. High winds often precluded such transfers. Also, attempts to transfer live fish only resulted in considerable down time for the guided boat since most if not all rods had to be pulled in during transfer. The colored high reward tags ($100 reward) attached to acoustic tagged trout will help ensure angler response (Pollock et al. 2001).

The project capitalizes on HCTF investments already made on Kootenay Lake and savings of economy are at play as the same experienced team will be used on Quesnel Lake (i.e., experienced crew that knows how to catch trout and effectively surgically tag and release them in good condition). Equipment purchased for the Kootenay Lake project will be used on this project. In addition, over the last year we have secured 10 acoustic receivers that were previously utilized for the Mabel Lake HCTF project that finished this past year. Further confirmed partnership funding from industry and the MFLNRO will cover costs of the remaining 6 receivers required for complete acoustic coverage. Risks to trout stocks in Quesnel Lake will be minimal. Kootenay Lake work determined that informative natural and fishing mortality estimates can be derived provided sufficient fish are tagged and the acoustic detection rate is high. That project also confirmed that sufficient fish can be caught (also confirmed by MFLNRO fisheries staff on Quesnel Lake in 2011 and 2012), that the mortality effects of rod capture and acoustic tagging are acceptable and that detection rate is high. Risk to the fish can also be minimized by not tagging bleeding fish, not capturing fish once surface temperatures rise above 15C and not attempting to surgically tag fish in rough waters.

The main risk associated with this project is that anglers fail to report the capture of tagged fish bearing high reward tags. This can be minimized by involving local fish and game club, resort owners and guides in the reporting. Also, non-reporting is considered low since the project will be well publicized and fish bear a tag with a contact telephone number and the text "$100 REWARD".

With regard to fish handling care, the Kootenay Lake project crew experienced very low mortality (<5%) by angling using barbless hooks, using a fine-mesh landing net with the fish placed directly into a marine cooler filled with fresh lake water.

Objective 2: Identify movement and distribution of rainbow trout, bull trout and lake trout within the lake. Further define major spawning sites for rainbow trout and blue listed bull trout populations.

Identifying the distribution and movement of trout in Quesnel Lake as well as further defining key spawning areas will provide the required science based information to ensure effective management of the Quesnel Lake sport fishery as well as provide the information required to protect important habitats from future resource development proposals within the watershed. This information will be used directly by the MFLNRO fisheries staff to manage this unique wild stock fishery.

This objective will be achieved by locating receivers throughout the lake and off the main suspected spawning streams [Horsefly and Mitchell rivers, Blue Lead creek] (McCubbing and Burrows 2002;

Sebastien et al. 2003). The distribution of tags in year one will be spatially stratified to ensure a representative sample of fish utilizing all areas of the lake are included. Results from year 1 will guide distribution of tags in subsequent years. If additional receivers are obtained on loan from DFO or other HCTF projects they would be placed upstream in the Mitchell River to define suspected bull trout spawning locations.

Objective 3: Increased level of participation and satisfaction in fishing on Quesnel Lake.

The current angling regulations on Quesnel Lake are amongst the most restrictive and controversial of any large lake in the province. These conservative regulations were implemented without the aid of detailed scientific data regarding the sport fishery. Stakeholders have clearly indicated these restrictive regulations are inhibiting angler use on Quesnel Lake. Anecdotal information indicates the trout populations in Quesnel Lake may be able to support a limited harvest opportunity which could increase angler effort substantially. An added benefit of this study is that the public will be involved through the capture and reporting of tagged fish. The MFLNRO fisheries staff have committed to meeting with local fish and game clubs, guides and Quesnel Lake resort owners to outline the project. The increased involvement of the angling public will result in increased acceptance and compliance of the regulatory regime implemented on Quesnel Lake.

Specifically, the third objective will be achieved through an angler tag reward scheme that includes $100 for each acoustic tagged fish reported and this objective relies heavily on angler and guide involvement. At the onset, MFLNRO fisheries staff will meet with club members, angling guides and resort owners to explain the entire project. The local fish and game club will be asked to participate in the retrieval of tagged fish information, most of which is usually obtained by "word of mouth". If angler exploitation is responsible for the decline in size of rainbow trout then it is important that the angling community understand this and be supportive of any required regulatory changes. On the other hand, data collected may result in revision of the current regulations to permit increased retention. This would be well received by anglers. In addition, the adaptive management approach of implementing new regulations after the initial 2 years of the study and allowing for multiple years of monitoring, after the change in regulations, will provide assurance to those with concerns regarding more liberal regulations, that the regulatory regime in effect at the end of this study is sustainable.

Measures of Success:

Objective 1: Estimate exploitation and natural mortality rates of Quesnel Lake rainbow trout, bull trout and lake trout.

Estimated exploitation rates for rainbow trout, bull trout and lake trout under the current management regime. Alter regulations after year 2 to allow increased opportunity, as anecdotal information indicates current regulations are unnecessarily restrictive and are limiting angler participation. Estimate exploitation rates under altered regulatory regime for multiple years to clearly discern how exploitation rates change in response to the change in regulations. Observed exploitation rates will be evaluated against optimal rates calculated for each species on other large lakes throughout BC and Ontario (Shuter et al. 1998; Bison et al. 2003; Andrusak and Thorley 2011; Andrusak and Thorley 2012; Andy Morris personal communication, 2012) This will ensure sustainable angling regulations are in place at the end of the study. Ultimately, angling regulations for this high priority wild stock fishery will be science based and defensible.

Objective 2: Identify movement and distribution of rainbow trout, bull trout and lake trout within the lake. Further define major spawning sites for rainbow trout and blue listed bull trout populations.

Successfully tag 25 rainbow trout, bull trout and lake trout with acoustic tags. Successful deployment of acoustic receivers throughout the lake, including key spawning tributaries. High detection rates of tagged fish. Produce a detailed outline of trout migration patterns and habitat use throughout the lake. Ultimately, inform development of sustainable angling regulations as well as provide a scientific basis for effectively protecting important habitats from negative effects of present and future development within the watershed.

Objective 3: Increased level of participation and satisfaction in fishing on Quesnel Lake.

Increased satisfaction and acceptance of Quesnel Lake regulatory regime from recreational anglers, guides and resort owners. MFLNRO fisheries staff will get a good understanding of stakeholder satisfaction through meetings with fish and game clubs, guides and resort owners that will occur throughout the study. In addition, while not required to directly meet objectives of this study, a complementary proposal to conduct creel studies has been submitted to the Cariboo Pine Beetle Economic Diversity Fund. If approved, changes in effort observed in the creel will provide a secondary measure of angler satisfaction.

Literature Cited

Andrusak, GF & Thorley. 2011. Kootenay Lake Exploitation Study: Fishing and Natural Mortality of Large Rainbow Trout and Bull Trout. A Poisson Consulting Ltd. and Redfish Consulting Ltd. Report prepared for the Habitat Conservation Trust Foundation.

Andrusak, GF & Thorley. 2012. Kootenay Lake Exploitation Study: Fishing and Natural Mortality of Large Rainbow Trout and Bull Trout. A Poisson Consulting Ltd. and Redfish Consulting Ltd. Report prepared for the Habitat Conservation Trust Foundation and Ministry of Forests, Lands and Natural Resource Operations. HCTF Report No. CAT12-4-413.

Bison, R., D. O'Brien, and S.J.D. Martell. 2003. An analysis of sustainable fishing options for Adams Lake bull trout using life history and telemetry data. BC Ministry of Water, Land and Air Protection, Fisheries Branch, Kamloops BC, February 2003.

Dolighan, R., T. Weir, D. Sebastien, J. Hume, and K. Shortreed. 2011. Influences of Sockeye Salmon on Kokanee and Rainbow Trout Populations in Quesnel Lake British Columbia. Report prepared for the Habitat Conservation Trust Foundation.

Pollock, K.H., J.M. Hoenig, W.S. Hearn & B. Calingaaert. 2001. Tag reporting rate estimation 1: An evaluation of the high-reward tagging method. N. Am. J. Fish. Manag. 21: 521-532.

Pollock, K.H., H. Jiang and J.E. Hightower. 2004. Combining Telemetry and Fisheries Tagging Models to Estimate Fishing Natural Mortality Rates. Transactions of the American Fisheries Society. 133: 639-648.

McCubbing, D. and D.J.F. Burroughs. 2002. Draft report McKinley creek rainbow trout enumeration: Application of a resistivity counter. Instream Fisheries Consultants report for the Ministry of Water,

Lands and Air Protection; Fisheries, Williams Lake, BC.

Sebastian, D.C. 1990. Juvenile rainbow trout produciton in the Horsefly River, the largest tributary to Quesnel Lake, BC. Ministry of Environment Recreational Fisheries Branch; Victoria BC. Fisheries project report No. FAIU-16.

Sebastian, D., R. Dolighan, H. Andrusak, J. Hume, P. Woodruff and G. Scholten. 2003. Summary of Quesnel Lake kokanee and rainbow trout biology with reference to sockey salmon. Stock Management Report No. 17. Province of British Columbia.

Shuter, B.J., M.L. Jones, R.M. Korver and N.P. Lester. 1998. A general, life history based model for regional management of fish stocks: the inland lake trout (Salvelinus namaycush) fisheries of Ontario. Can. J. Fish. Aquat. Sci. 55: 2161-2177.

Thorley, J.L., R. Laughton and A.F. Youngson. 2007. Seasonal variation in rod recapture rates indicates differential exploitation of Atlantic salmon, Salmo salar, stock components. Fish. Manag. Ecol. 14: 191-198.

Personal Communications

Andy Morris. 2012. Fisheries Biologist. Ministry of Forests, Lands and Natural Resource Operations. Thompson Region.

Paul Askey. 2012. Fisheries Stock Assessment Biologist. Ministry of Forests, Lands and Natural Resource Operations. Okanagan Region.

Communications/Outreach

Project Communications Plan

This project will be well publicized and receive considerable attention from local residents and media. This project has been long anticipated by a critical public that is becoming increasingly frustrated with conservative angling regulations that are not science based. A great deal of public good will is anticipated and local involvement of anglers, guides and resort operators will greatly increase project success. In addition to MFLNRO fisheries staff meeting with local clubs, guides and resort owners, posters will be produced and distributed to angling shops and displayed in prominent locations around the lake. Results will also be presented to the provincial large lakes committee.

HCTF Communications Plan

This project will help HCTF meet the goal of being a recognized leader in fish, wildlife and habitat conservation as there will be considerable interest from local resort owners, guides and general angling public as the current restrictive angling regulations in place for Quesnel Lake have remained controversial since being implemented in 2002/2003. The MFLNRO fisheries staff will engage resort owners, guides and angling clubs prior to and throughout the course of this study. In all meetings/presentations HCTF will be recognized as the primary partner in conducting this study focussed on ensuring the long term sustainability of these wild stocks while also maximizing angling opportunities on Quesnel Lake. HCTF will also be prominently identified on all publications/posters developed for this study.

New Multi-Year Project: Quesnel Lake Angler Exploitation Study

Budget A. Labour Costs

Human Resources: Wages & Salaries

Position	Total Days on Project	HCTF Person Days	Rate/Day	Total HCTF Amount
fisheries technician - monitor and maintain acoustic array (i.e., 16 receivers)	20	20	$250	$5,000

Subcontractors/consultants

Position	Total Days on Project	HCTF Person Days	Rate/Day	Total HCTF Amount
Guide (day rate includes boat & gas)	22	22	$700	$15,400
Biologist - fish capture, surgery	22	22	$500	$11,000
Data summary, analysis	10	10	$500	$5,000
Scale reading, otoliths	4	4	$300	$1,200
GIS, array downloads	10	10	$500	$5,000

Other

Description	Total Days on Project	HCTF Person Days

Sub-Total Labour Costs = $42,600

Budget B. Site/Project Costs

	Description	Total HCTF Amount
Travel	4,600km @ $0.50/km ($2,300); Per diems ($47/day); 44 days ($2,200); Motel (contractors, MFLNRO staff) - 52 nights @ $100/night ($5,200)	$9,700
Capital Expenditures/Equipment Purchase	Acoustic Receivers 16 @ $1430.00 each ($22,880.00) - Covered through partnership funding	
Site Supplies & Materials	75 V 13L @ $380/tag ($28,500.00); Surgical supplies ($1000.00)	$29,500
Rentals (equipment, vehicle, helicopter)	2 VHF radios	$900
Work & Safety Supplies		
Repairs & Maintenance		
buoys, rope/cable, anchors ($300/reciever = $4,800) - Covered through partnership funding		

SubTotal Site/Project Costs = $40,100

Budget C. Overhead/Administration

	Description	Total HCTF Amount
Office space, utilities (incl.		

telephone), etc.		
Office supplies		
Printing/photocopying		
Administration fee	admin fee (13% of $5000)	$650
Sub-contractor administration fee (if not included in Labour Cost Budget)		

SubTotal Overhead/Administration Costs = $650

Administration Fees

Admin fee is 13%. 13% of $5000 was charged.

Capital Expenditures and purchases over $1,000

Item Description	Cost
(acoustic receivers cost covered by other funders)	

Budget D. HCTF Budget Request Summary

Labour Costs	**$42,600**
Project/Site Costs	**$40,100**
Overhead Costs	**$650**
Total Amount from HCTF:	**$83,350**

Budget E. Other Funding Partners

Name of Organization	In-Kind Amount($)	Cash Requested($)	Cash Confirmed($)	Total
	$15,000	$27,300	$27,300	$42,300
		$20,000	$20,000	$20,000
	$5,000			$5,000
	$3,000			$3,000
		$2,000		$2,000
Total All Partners	**$23,000**	**$49,300**	**$47,300**	**$72,300**

Percent of Cash Request that is Confirmed = 96%

Total Project Costs

New Multi-Year Project: Quesnel Lake Angler Exploitation Study

Total Partners Amount	Total HCTF Amount	Project Total
$72,300	$83,350	$155,650
46%	54%	100%

Response to Technical Committee and Board Comments

N/A

Attachments

Letter of Support

Map

Map